

## Notes of the BOILER TEST GROUP Meeting

Held on 4<sup>th</sup> NOVEMBER 2009

HOLIDAY INN EXPRESS, BEDFORD

### Present:

Roger Greatrex, Chairman,  
Tony Wood, Walker Midgley Insurance Brokers  
Mike Leahy, Independent  
Brian Reading, 7¼" Gauge Society  
Wally Pearson, Southern Federation  
Frank Stephen, Northern Association  
Malcolm Armstrong, Midlands Federation  
John Norman, Model Steam Road Vehicle Society.  
Maureen Stephen, Note taker.

### Agenda Item 1

The Chairman opened the meeting at 10.10 by welcoming everyone present. Apologies for absence were recorded from Mr B Harrison.

### Agenda Item 2

**The boiler test code, the 'Blue Book'**. Alphabetical Appendices referred to are from the Blue Book. Numerical Appendices are in this document. The meeting commenced by reviewing the previously circulated written comments, see Appendix 1. The comments had been received by Walker Midgley and N.A.M.E.

1. Appendix B, introductory paragraph on page 17;  
The words 'may wish' – should be changed to 'shall'

2. The last paragraph on page 19/20 re ultrasonic etc. testing. It was suggested that the testing is either needed or it isn't. The word 'consider' puts the boiler inspector in an awkward position if a boiler goes bang! The HSE or a court could ask the boiler inspector if he had considered using ultrasonic tests. If he says that he didn't - is he leaving himself open to an allegation of negligence?

The meeting discussed these comments and it was felt that the Test Code had the right attitude and was guidance for a hobby activity. Boiler Inspectors should act within the scheme guidelines and note that the H.S.E. does not make things prescriptive

Items 1 and 2: The meeting agreed 'No Action'.

3. Why is a witness needed for boiler tests?

The requirements of a witness are covered in clause 2.7. Being a witness provides a training opportunity for future Boiler Inspectors and also assists the boiler inspector in his inspection. A witness can also assist the Boiler Inspector should an incident arise.

4. Screw operated valves on previously tested boilers.

The meeting recommends that screw operated valves should have captive spindles. A suggested arrangement is attached to these notes.

5. Test code wording of Water Levels and water gauges e.g. page 18, 4<sup>th</sup> paragraph.

The meeting agreed that the wording for these items would be reviewed when the test code is due for reprinting. (A note re this topic is given in Appendix 2 following a meeting with the RSA.)

6. The test Code should be Prescriptive.

H.S.E. recommendations are that the code should not be prescriptive, a guideline only. It becomes a fact if and when it goes to court.

7. Increase in Steam Test Periodicity to 24 months

The 14 month steam test period was an 'industry standard'. This point was one of the trade-offs made during the original discussion with HSE on periodicity of boiler testing. Those present at the original HSE meetings confirmed that the HSE were not prepared to allow an increase in periodicity of the hydraulic test unless additional inspections were introduced at intermediate periods i.e. the steam test, in line with PSSR.

**7a.** Re: Page 7 Para 5.1

Agreed the date should be 30th May 2002. To be corrected.

**8.** Concerns regarding the use of the word 'ensure' in the forward and purpose statements of the document.

This wording was not questioned by H.S.E. or their Legal Department, however the concerns would be considered in any future rewriting.

The Chairman then asked the representatives for their comments

**The 7¼" Gauge Society** had not received any written comments.

**The Model Steam Road Vehicle Society;** Being members of SF any comment might have gone via Mr Wally Pearson. None came via MSRVS committee.

#### **Midland Federation.**

One Society had limited the time period for Steam Test Certificates to 12 months as Society Policy. There was no problem with this practice see page 3, 5<sup>th</sup> Paragraph.

#### **N.A.M.E.**

The matter of CE marking had been covered in publications.

Recent issues had been raised about CE Marking and the Boiler Test Paperwork.

With regard to the boiler test paperwork this would be reviewed when existing stocks have been exhausted.

Suggestions were made to reduce the certificates to one page but it was pointed out that separate pages for the Hydraulic and Steam tests were necessary to maintain security of issue.

#### **Southern Federation**

A list of comments from the Southern Federation societies was presented by Mr Wally Pearson. See Appendix 3 for more information.

A list of questions had been supplied to the Group by e-mail dated 21<sup>st</sup> July 2009. At the time it was stated that it would be improper to supply copies of the original comments since much of it was incorporated in communications to the Southern Federation dealing with other topics. It is accepted that the (14) items identified at the time were only outline questions and required expansion and discussion at the meeting.

**SFQ1** *Is it mandatory to use the Boiler Test Code (Blue Book) and the associated test certification if the Society is a member of the Southern Federation?*

The question arose from one particular Society that is known to produce their own boiler certification. It is believed that the Society has a right to use their own certification on the understanding that when visiting other Societies the certification may not be recognised. The Society in question has its own Insurance policy in place and does not use that provided by Footman James. It has already been stated to the Group that the Southern Federation does not interfere with the running of the affairs of any of the member Societies of the Federation. It was also pointed out that several of the bodies associated with the Southern Federation already have in place boiler test procedures and related documentation that is not based on the Blue Book. There is no policy in place from the Southern Federation to force these members to conform to the requirements of the Blue Book and the associated certification.

Under these circumstances therefore it must be accepted that the requirement is not mandatory. It is accepted however, for the sake of uniformity, that it is recommended.

**The meeting responded** that the intention of the Boiler Test scheme was that it would be applied nationally. The Blue Book and paperwork would offer uniformity throughout the hobby. The meeting pointed out that the 'blue book' was 'not mandatory' but where other schemes were used they should clearly state the code to which they were being tested. Societies should check with their Insurance Company as to their individual test requirements. If Certificates do not comply with the national scheme (Blue Book) they may have difficulty with Certificates being accepted elsewhere. The Boiler Test Code has been backed by H.S.E. and to comply with the Code is good practice.

**SFQ2** *This question was raised by Tony Wood item 7 and is therefore not repeated here.*

The answer given in the meeting notes is not complete since it does not fully address the issue of a break point of 3-100 bar litre boilers, and the suggestion that pressure gauges be validated on a four year basis, i.e. at the time of the hydraulic test. The simplistic answer that the requirement is a 'trade-off' may well not satisfy the originator of the question. The question was raised in various forms during the review of the Red Book prior to the issue of the Blue Book in 2007/8. No response was given at that time which accounts for the reason why it has been raised again.

**The meeting noted** that the HSE were not prepared to allow an increase in periodicity of the hydraulic test unless additional inspections were introduced at intermediate periods i.e. the steam test, in line with PSSR.

**SFQ3** *Identified proofing errors in the text of the Blue Book.*

At the meeting it was established that Mike Leahy would continue to be the holder of the master copy of the Blue Book. Other copies have been issued to representatives of the appropriate Associations. However, only one copy should be used for updating as and when required. The related information contained in this specific report will be sent to Mike Leahy for inclusion in the Blue Book as and when required for issue.

**Meeting notes on SFQ2 & SFQ3.** Blue Book 'Errors'

A list of 'Proofing Errors' was presented. The meeting accepted that in some cases improvements could be made. Mr Mike Leahy agreed that he would be prepared to make the appropriate adjustments to any future revised document

**SFQ4** *Contradictions and inconsistencies in the Boiler Test code some of which were unwittingly introduced by ill considered alterations to the original test code.*

*(a)Section 10.5 states that an overpressure of 10% is acceptable during a steam test. Section 11.3 bullet 13 states that the safety valve set pressure must not exceed the maximum working pressure. There is no definition of the 'set pressure'. This apparent contradiction has led to a boiler test sub-committee to decide that the 10% allowance is not permissible and that the safety valve(s) must be set low enough such that the over pressure does not exceed the boiler SWP.*

The response given to this statement in the meeting notes is correct. However it may be appropriate to more clearly specify the requirement when the Blue Book is re issued.

*(b)Comments regarding Appendix B 'may' and 'shall', what is a 'safe water level?' and 'water shall not be visible' have been covered elsewhere in the Draft Minutes*

It is understood that the text will be reviewed and re-written by Barry Wilkinson.

**The meeting's response** to the question was:

The meeting agreed that there was a distinct and clear difference between an accumulation test of the safety valves and the setting of the safety valves. The points raised were two separate tests, not ambiguous, and that Boiler Inspectors should clearly understand the difference between the two clauses.

**SFQ5** *Principally the same queries as 4(b) together with a request for improvements in format of the Test Code and the use of a skilled person be engaged to reformat the book.*

The response to these queries is essentially the same as that in paragraph 4.

**Meeting notes** on SFQ5 re Water Gauge wording.

There was an offer from an individual member to rewrite the clauses where water gauges and water levels were contained. These would be incorporated in a revision of the Blue Book.

**SFQ6** *Paragraph 11.7 states that Test Certificates issued by professional/commercial organisations shall be accepted.*

The origin of this query is typical of several that have been received over the period of time July to November 2009. There are many reasons given why boiler inspectors should have the right to refuse a commercial boiler certificate if they believed that for one reason or another it was invalid. Boilers have been found with current (in fact in some cases immediately recent) certificates where the boiler was obviously defective, failing to meet basic standards related to the boiler test code e.g. no red line on pressure gauge or inability to limit the pressure rise to 10% and boiler feed mechanisms not working. In accordance with the Boiler Test Code, boiler inspectors are forbidden to test a commercially manufactured boiler if it does not bear the appropriate CE mark (paragraph 5.1). Some commercial boiler examiners are supplying a certificate that states 'CE mark not found' related to boilers that should in fact be CE compliant. The Joint Statement, CE Approval for Boilers, issued by Walker Midgley/Footman James in April 2009 clearly states 'how can a boiler certificate be valid if the boiler is not CE compliant'?

Surely this also should be grounds for non acceptance of such a certificate. The boiler inspector and the Club or Society would be out of order to accept such a certificate on behalf of the associated insurance provider.

**Meeting notes** re Test Certificates

Clause 11.7 applies and Certificates issued shall be accepted. However where the Boiler Inspector has evidence or suspects that the model is not operating in strict accordance with the certificate the owner can be challenged.

**SFQ7** *General query relating to revisions in the current Blue Book and the requirement for retrospective compliance. Specifically the Blue Book revised edition 2008 states that the provisions of this code (Blue Book) shall come in to force 1<sup>st</sup> January 2006.*

Clarification is therefore needed as to when retrospective compliance is to be implemented since the date from which the code shall operate is prior to the changes being published. Typical retrospective action is required for

boilers fitted with non captive screw operated valves and the query then becomes '*is the action mandatory or advisory*'?

Further definition on this specific point relates to what was intended as a valve requiring to be modified. Some club boiler inspectors have made it mandatory to include the requirement to modify blow down valves, whilst others have applied the requirement to hand operated valves only.

#### **Meeting note** re Revisions of the Blue Book

The meeting agreed that the provisions of the code should have been applied from the date of issue. Certificates issued under the red book would continue to be valid until a retest was required under the blue book.

**SFQ8** *Requirement for Club boiler inspectors to confirm that a boiler is CE compliant is not specified in the Blue Book. There is no information given as to what documents are required.*

The complaint here is that it should not be necessary for the owner/inspector to look through magazines published several years ago in order to obtain relevant information.

In this specific case the Southern Federation has issued a series of Information Sheets dealing with this subject. This level of information is probably not used by all the Associations.

#### **Meeting notes** re Boiler Inspectors

The meeting anticipated that boiler inspectors appointed by Societies would have experience and competency as outlined in clause 2.6. It is appreciated that the Boiler Test Code requires a responsible attitude from the Boiler Inspector, but it should be noted that the document is worded for and applies to a hobby activity.

**SFQ9** *With reference to Appendix A paragraph 3, 'what form of samples are required to be supplied for test for a non coded welder and to whom should the samples be sent for test'.*

The situation is similar to that in paragraph 8 above in that an instruction is made without any form of qualification or descriptive information. It is left to the imagination of the boiler inspector or the owner of the boiler to determine a course of action. There should be some information made available to users of the Blue Book as to where more detailed information can be found if it is not already included in the text. Hence the suggestion that was made that a Code of practice type book accompanied the Blue Book publication. No definition of test sample has been provided.

#### **Meeting notes** re non coded welder samples.

This would be at the Boiler Inspector's discretion. Any test samples would need to be sent to an approved Test Station. Any welder carrying out any work on boilers should preferably hold current certification.

It was suggested that a separate document, perhaps a Code of Practice, be produced to 'explain' the blue book.

The meeting discussed this and felt that the production of such a document would be extremely difficult due to the passage of time, changes that have taken place since the document was created and the difficulty of keeping such a document up to date. The more text that we produce the greater the risk of breaking the rules. The meeting reiterated that the aim of the documents produced so far was to be descriptive and **not** prescriptive.

#### **Agenda Item 3**

Following discussion Mr Mike Leahy agreed that he would be prepared to make the appropriate adjustments to any future revised document.

The meeting agreed

1. That there were no urgent issues that required any publications at the present time.
2. That the notes taken at this meeting be circulated to the respective bodies with a view to passing them on to all Societies.

#### **Agenda Item 4**

The meeting discussed a proposal to write a Boiler Construction Code Document. Discussion ensued on the merits of including Stainless Steel. Stainless Steel boilers were only a minority interest at present and would therefore not be included. In spite of statements currently being published and circulated that the Australian Design and Construction Code for Duplex Steel Boilers had been finally approved it was now our understanding that this was not in fact the case. Apparently whilst the Organisations Governing the hobby had given their approval, agreement from the appropriate Government Department is still awaited.

Discussion then moved to copper boilers and the meeting felt that a copper construction code may be a possibility. A steel boiler construction code was not really practicable at present – the majority of individuals bought directly from a steel boiler manufacturer.

Members from the N.A.M.E. had provided some copper construction guidelines and the meeting felt it would be useful for these to be circulated. The existence of the Australian Codes covering boiler construction in both steel and copper was noted.

In any discussion of boiler construction it was felt that manufacturers of copper and steel boilers should be consulted. The Chairman agreed to contact his colleagues in the copper boiler construction trade, and Mr Mike Leahy offered to contact Mr Billington with regard to his preparation of a construction code.

Mr Wally Pearson offered to contact the gentleman who had offered to write a construction code document to ascertain his interest in the production of a comprehensive document.

It was agreed that when all the information was available on all the above topics that a decision could be made about a possible meeting to discuss a construction code.

### **Any Other Business**

The meeting then dealt with an enquiry regarding the updating of HSG 216. It was noted that this document was now back 'in the hands of' the H.S.E. having moved across to the Railway Inspectorate for some undetermined time.

It was noted that the definition of braking in HSG 216 was 'on to the wheel', exactly as it reads and not on the sides, back or rims!!

Recent information was that there was no intention by the H.S.E. to review the document.

Finally Mr Wally Pearson raised an issue regarding commercial activities. At an event where the HSW Act applied then PSSR also applied in full. It was noted that where the HSW Act applied then the national boiler test scheme documents would not be valid.

There had been an understanding that where Societies operated 'not for profit' of individuals and companies this would not be treated as 'commercial'

The date and time of the next meeting will be advised when all participants had time to review the documents from this meeting.

The Chairman thanked everyone for attending and closed the meeting at 3.10 pm.

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### **Appendix 1.**

Written comments received prior to the meeting: -

1. Paragraph Appendix B on page 17 and the words 'may wish' – it is felt that these should be changed to 'shall'
2. Last paragraph on page 19/20 re ultrasonic etc testing. It is felt that the testing is either needed or it isn't and the word consider puts the boiler inspector in an awkward position e.g. if a boiler goes bang and HSE or a court ask the boiler inspector if he considered using ultrasonic and he says that he didn't is he leaving himself open to an allegation of negligence? (I am told that some boiler inspectors have resigned over this issue)
3. Why is a witness needed? The boiler inspector is the one putting his head on the block. Finding a witness for some societies with members many miles apart is sometimes a problem. Professional boiler tests do not need a witness.
4. Screw operated valves on previously tested boilers
5. Page 18 4<sup>th</sup> paragraph – wording of the water gauges paragraph
6. The test code should be prescriptive – if litigation arises the boiler inspector can defend his actions by saying 'I tested in accordance with the test code'
7. We the Romney Marsh Model Engineering Society are not convinced that the reduction in steam test periodicity from two years to an annual event has been beneficial and proved to significantly raise maintenance standards which are already very high. We therefore propose that for copper boilers within the range of 3 to 100 bar-litres that the current periodicity for the cold examination and steam test at an interval not exceeding fourteen months should be replaced by a "period not exceeding twenty-four months". Furthermore over the last four years our experience having carried out around two hundred hydraulic together and annual cold examination/steam tests is that only two pressure gauges have required replacement. We therefore propose that the verification of pressure gauges against a gauge of known accuracy should be carried out as part of the four yearly hydraulic examination. This would obviate the necessity of annually removing pressure gauges which is proving a constant problem particularly with the smaller locomotives.
- 7a. Page 7 paragraph 5.1 – the date should be 30 May 2002
8. Revised edition Blue book 2008 – comment from boiler inspector

I have concerns regarding the use of the word 'ensure' in the forward and purpose statements of the document. These arise from dealings in the past with HSE, HMRI, RAIB and other regulatory bodies, and lengthy discussions with the company solicitor over the use of the word. The word also appears a few times in the main body of the document.

The solicitor's counsel was that the word 'ensure' is interpreted in law as mandatory, in the same way as the term 'shall'. Initially his advice was that the term must be used in company documents with caution, as it implied an absolute and irrevocable obligation on the company. For a while it was acceptable to use it in the way such as an individual 'shall ensure that records are maintained in accordance with ....' but to use it in any direct reference to a safety requirement was prohibited. Writing a Standard or Work Instruction and using the term 'to ensure safety' placed an absolute obligation on the company, and possibly the author, from which there was no mitigation if things did go wrong. Using 'should ensure' was not considered at law to imply an advisory or best practice condition. Eventually the use of the word was banned and withdrawn from all company documentation.

So on Page 3 of the code, where the purpose of the document is stated 'To ensure that boilers are constructed....' apart from being subtly different with the introduction on the inside front cover where 'this code should ensure that boilers....' is used, the word causes me concerns.

I do not believe that anyone in authority will challenge the intent of the boiler test code, but in the event that there is an incident that leads to an owner or operator of a boiler having to explain themselves to the man in the curly wig, I fear that individual will be at a disadvantage, even if they have followed the requirements of the document, and the reputation of the hobby may be damaged.

I would like to suggest that the Liaison Group responsible for the Boiler Test Code document to seek legal advice on this matter. There is no doubt, amongst the membership of the Association, someone with legal expertise. Failing that, the opinion of Royal & Sun Alliance could be sought.

9. I've just had a conversation with a client who has pointed out that the boiler code says you shall not inspect a non CE marked new boiler (Paragraph 5.1) – it does not say that you shall not inspect a non CE marked old boiler.

## **Appendix 2**

### **The following is an extract from a meeting with the RSA.**

At a meeting with the RSA 19<sup>th</sup> March 2009 at which this topic was raised the following were suggested.

1. The bottom of the gauge glass should be above the crown. If the connection is below the crown then the bottom of the gauge glass should be fitted with a shroud of suitable material. This would ensure that when water is visible it is above the crown.
2. Page 19 paragraph 5 refers. It was agreed that the boiler tester could use his judgement as to whether a gauge coming off a manifold caused a major problem. Following some discussion the RSA hoped that common sense would be used by boiler inspectors on these topics. Existing models can still be tested.

## **Appendix 3**

Additional text provided with the questions raised by the Southern Federation representative, Mr Wally Pearson.

## **INTRODUCTION**

The writer has been requested to supply further information with regard to the questions posed at the meeting from members of the Southern Federation related to the problems associated with the new Examination & Testing of Miniature Steam Boilers (Revised Edition 2008), otherwise known as the Blue Book. The writer had tried to make it clear at the meeting that he had no prior involvement in the production of this Edition and was treating it with the view of an outsider. Persons who have been members of the Group therefore have personal knowledge of what was intended or expected when the document was originally produced. The writer, like other Club and Society members can only read what is presented to them. Where information is not present or incomplete it then becomes a requirement to assume or guess what is intended, with the probability of getting it wrong. The alternative is to ask the question of the Group for definitive answers. That is what the writer had tried to do at the meeting.

A list of questions had been supplied to the Group by e-mail dated 21<sup>st</sup> July 2009. At the time it was stated that it would be improper to supply copies of the original comments since much of it was incorporated in communications to the Southern Federation dealing with other topics. It is accepted that the (14) items identified at the time were only outline questions and required expansion and discussion at the meeting.

The penultimate paragraph of the list of topics indicated that comments/criticisms that had been sent in related to the 2006 edition Red Book had not been included in the list. A number of these topics had not apparently been resolved. It may be appropriate to reconsider these items since over 20 have been documented.

## **CONCLUSION**

It should be apparent from the above that there is a fair degree of discontent from the membership regarding the lack of information or conflicting information within the Blue Book. It is appreciated that the Blue Book would not be **prescriptive** although a properly produced document that requires the use of a check sheet leaves very little scope for confusion or criticism. A document that is for **guidance purposes** leaves itself wide open to variation, inconsistency and probable dangerous misinterpretation. A document that is **descriptive**, giving an explanation of exactly what is required and if necessary a guide on how to carry out the requirement is middle way that would probably be acceptable. As a typical example, how many members or inspectors know how to test super-heaters?

It can also be inferred that if a substantial number of boiler inspectors find it necessary to attend a boiler seminar then there must be some lack of source information or confusing information within the Blue Book. Reference is continually made here to the Blue Book but there is also some confusion that the current edition 2008 is published on a web site with a Red cover.

#### **BOILER DESIGN AND CONSTRUCTION CODES**

As far back as 2004 under the MRLG it had been stated that the Group were preparing design and construction codes for both copper and steel boilers, along the lines of the Australian codes but modified to suit UK requirements. It is now late 2009 and still there is no positive progress.

#### **ANY OTHER BUSINESS.**

The writer raised the point regarding CE marking of boilers. The documentation regarding correspondence between the writer and BIS and the formal response from BIS had previously been circulated to members of the Group. The option was for the documentation to be issued jointly but was not taken up. It is intended to issue the documentation to member Societies of the Southern Federation through the process of Information Sheets, News Letter and web site.

The query regarding the validity of Federation boiler certification for a home built but not CE marked boiler when the locomotive is used for commercial purposes was discussed. The relevant information has been passed by the writer to Footman James for forwarding to RSA to resolve the issue.

End of Appendices

End of document.

2<sup>nd</sup> December 2009